



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Fredberg et al.
Serial No.: 10/620,884
Filed: July 16, 2003
For: RADOME WITH
POLYESTER-POLYARYLATE
FIBERS AND
METHOD OF MAKING SAME

Group: 1771
Examiner: Singh, Arti R.
Docket No.: RAY-132J

AFFIDAVIT UNDER 37 C.F.R. §1.131

We, Marvin I. Fredberg, Peter H. Sheahan, Sharon A. Elsworth, and Kaichang Chang, being duly sworn, depose and say:

We are the inventors for the patent application identified above and of the subject matter described and claimed therein.

We conceived in the United States the invention claimed in the above-identified patent application prior to January 23, 2003.

Prior to January 23, 2003, we had conceived of the invention as described and claimed in the subject application in the United States as evidenced by the attached Exhibits A and B, which are portions of the Invention Disclosure Detailed Description for the subject invention describing a fabric radome used to provide environmental protection for antenna equipment and polyester-polyarylate (VECTRAN®) reinforced fabric.

Exhibits A and B, which relate to the aforementioned conception, correspond to the invention disclosed and claimed in the above-identified patent application.

Each of the dates deleted from attached Exhibits A and B is prior to January 23, 2003.

In Witness Whereof, we hereto set my hand and seal at Sudbury, MA
(city, town)
this 4th day of October, 2006.

Marvin I. Fredberg
Marvin I. Fredberg

Sharon A. Elsworth
Sharon A. Elsworth

Peter H. Sheahan
Peter H. Sheahan

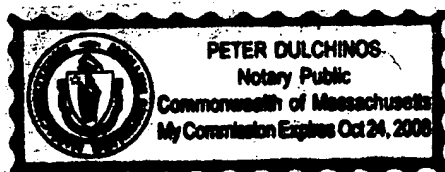
Kaichang Chang
Kaichang Chang

Commonwealth of MA Massachusetts }
County of MA Middlesex }

Before me this MA 4th day of MA October, 2006, personally appeared Marvin I. Fredberg, proved to me through satisfactory evidence of identification, which were MA personally known ID, Peter H. Sheahan, proved to me through satisfactory evidence of identification, which were MA personally known ID, Sharon A. Elsworth, proved to me through satisfactory evidence of identification, which were MA personally known ID, and Kaichang Chang, proved to me through satisfactory evidence of identification, which were MA personally known ID, to be the persons whose names are subscribed to the foregoing assignment and acknowledged that they executed the same as their free act and deed for the purposes therein contained.

MA Peter Dulchinos
[Notary's
seal here]

Notary Public Peter Dulchinos
My commission expires: Oct. 24, 2008



REDACTED



REDACTED

REDACTED

Superior RF Transmission Performance

Fabric radomes are commonly used to provide environmental protection for antenna equipment. For minimum RF losses it is advantageous for the membrane material to have a low dielectric constant and loss tangent, and to be of minimum thickness. In RF transmission measurement testing, Vectran fiber reinforced fabric composite demonstrated excellent electrical properties including the low dielectric constant of 2.781 and loss tangent of 0.00989. Furthermore, characteristics of low water absorption minimize RF transmission loss in long term humid environments. The trend towards higher frequencies and wider and multi-band coverages allows Vectran fabric to be a leading candidate to provide superior RF transmission performance.

INVENTOR(S) SIGN AND DATE:

Martin Fredberg

REDACTED

WITNESS NAME (PRINT)

WITNESS SIGNATURE

DATE

WITNESS NAME (PRINT)

WITNESS SIGNATURE

DATE

PATENTS AND LICENSING USE ONLY

Title from disclosure form

Inventor's Names separated by commas

DATE RECEIVED

PATENT DOCKET NUMBER

IP/INDSC REV.

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EXHIBIT
B



Vectran Radome Application

Raytheon
Electronic Systems

ANES & OR Engineering

- XBR Radome Designed Using Vectran Fabric
 - Reliability = 0.999 for 20 year service life (Safety Factor >5) Including Knock Downs For:
 - Wind Load Variations
 - Environmental Degradation (UV, moisture, temperature, load cycles)
 - Variable & Sustained Loading Effects
 - Fabric Damage/Crease Fold Damage
 - Multi-Axis Loading Conditions
 - Material Property Variations

REDACTED

REDACTED

by Fredberg P. Shashen S. Elworth K. Chang